REMARKS

Claims 1 through 24 are pending in the case.

Claims 1 through 20 are rejected under 35 U.S.C. § 102(b) as being anticipated by USPN 5,640,697 (Orndorff).

Claims 21 through 24 are new.

Applicant has amended independent claims 1, 7 and 14 to emphasize clear distinctions over the cited art. Applicant respectfully traverses the rejections as to the claims as amended.

Below, Applicant points out subject matter within each independent claim that is not disclosed or suggested by the cited art. On the basis of this, Applicant believes the independent claims discussed below and all the claims dependent thereon are patentable over the cited art.

Discussion of Independent Claim 1

Claim 1 sets out a method for reducing occurrence of spurs when analyzing signals. A first signal is mixed with a local oscillator signal to produce an intermediate signal.

Claim 1 sets out that when a spur is predicted to occur when the first converter means performs high side mixing and a spur is predicted to occur when the first converter means performs low side mixing, the first converter means determines whether the spur that is predicted to occur when the first converter means performs high side mixing is greater than the spur that is predicted to occur when the first converter means performs low side mixing.

When the first converter means determines the spur that is predicted to occur when the first converter means performs high side mixing is greater than the spur that is predicted to occur when the first converter means performs low side mixing, the first converter means performs low side mixing. This is not disclosed or suggested by Orndorff.

Orndorff takes a completely different tact than that set out by claim 1. Particularly, as taught by Orndorff at column 6, lines 55 through 57, a combination of IF frequency shifting and a change from high-side injection is used to low-side injection to completely avoid spurs. Orndorff does not disclose or suggest determining whether a spur that is predicted to occur when high side mixing is performed is greater than the spur that is predicted to occur when low side mixing is performed. In fact, such a determination would be superfluous in Orndorff where IF frequency shifting is used to avoid all spurs.

In claim 1, however, when it is determined that the spur that is predicted to occur when high side mixing is performed is greater than the spur that is predicted to occur when low side mixing is performed, low side mixing is performed. Orndorff does not disclose or suggest making such a determination.

Discussion of Independent Claim 7

Claim 7 sets out a signal analyzer that includes a first converter system. When a spur is predicted to occur when the first converter system

performs high side mixing and a spur is predicted to occur when the first converter system performs low side mixing, the first converter system determines whether the spur that is predicted to occur when the first converter system performs high side mixing is lesser than the spur that is predicted to occur when the first converter system performs low side mixing. When the first converter system determines that the spur that is predicted to occur when the first converter system performs high side mixing is lesser than the spur that is predicted to occur when the first converter system performs low side mixing, the first converter system performs high side mixing. This is not disclosed or suggested by Orndorff.

Orndorff takes a completely different tact than that set out by claim 7. Particularly, as taught by Orndorff at column 6, lines 55 through 57 and at column 7, lines 17 through 29, a combination of IF frequency shifting and a change from high-side injection to low-side injection is used to completely avoid spurs. Orndorff does not disclose or suggest that a first converter system determines whether the spur that is predicted to occur when the first converter system performs high side mixing is lesser than the spur that is predicted to occur when the first converter system performs low side mixing. In fact, such a determination would be superfluous in Orndorff where IF frequency shifting is used to avoid all spurs.

In claim 7, however, when the first converter system determines that the spur that is predicted to occur when the first converter system performs high side mixing is lesser than the spur that is predicted to occur when the

first converter system performs low side mixing, the first converter system performs high side mixing. Orndorff does not disclose or suggest making such a determination.

Discussion of Independent Claim 14

Claim 14 sets out a signal analyzer that includes a first converter means. When a spur is predicted to occur when the first converter means performs high side mixing and a spur is predicted to occur when the first converter means performs low side mixing, the first converter means determines whether the spur that is predicted to occur when the first converter means performs high side mixing is greater than the spur that is predicted to occur when the first converter means performs low side mixing. When the first converter means determines the spur that is predicted to occur when the first converter means performs high side mixing is greater than the spur that is predicted to occur when the first converter means performs low side mixing, the first converter means performs low side mixing. This is not disclosed or suggested by Orndorff.

Orndorff takes a completely different tact than that set out by claim 14. Particularly, as taught by Orndorff at column 6, lines 55 through 57 and at column 7, lines 17 through 29, a combination of IF frequency shifting and a change from high-side injection to low-side injection is used to completely avoid spurs. Orndorff does not disclose or suggest that a first converter means determines whether the spur that is predicted to occur when the first

converter means performs high side mixing is greater than the spur that is predicted to occur when the first converter means performs low side mixing. In fact, such a determination would be superfluous in Orndorff where IF frequency shifting is used to avoid all spurs.

In claim 14, however, when the first converter means determines the spur that is predicted to occur when the first converter means performs high side mixing is greater than the spur that is predicted to occur when the first converter means performs low side mixing, the first converter means performs low side mixing. Orndorff does not disclose or suggest making such a determination.

Discussion of Independent Claim 21

Claim 21 sets out a method for reducing occurrence of spurs when analyzing signals from a device under test. A first signal, generated external to the signal analyzer by the device under test, is mixed with a local oscillator signal to produce an intermediate signal. When a spur is predicted to occur as a result of high side mixing of the first signal with the local oscillator signal but not as a result of low side mixing of the first signal with the local oscillator signal, low side mixing is performed. When a spur is predicted to occur as a result of low side mixing of the first signal with the local oscillator signal but not as a result of high side mixing of the first signal with the local oscillator signal, high side mixing is performed. This is not disclosed or suggested by Orndorff.

In Orndorff, receiver spurs occur when the first local oscillator and the second local oscillator and/or their harmonics combine in the first or second mixer and produce an output that falls within the third IF bandwidth. See Orndorff at column 1, lines 27 through 30.

Thus, in Orndorff, the spurs are the results of combining two internally generated signals. Orndorff does not disclose or suggest generated as a result of mixing a signal generated external to a signal analyzer with a local oscillator signal.

In claim 21, however, spurs that are predicted to occur as a result of mixing a first signal generated external to the signal analyzer by the device under test with a local oscillator signal are avoided. Orndorff does not disclose or suggest predicting or eliminating spurs generated in this manner.

Examiner, in discussing claims 3 through 5, 9 and 16 calls low-band oscillator 38 and high-band oscillator 40 "an external oscillator signal". However, as is clear from Figure 3 and column 3, lines 9 through 23 of Orndorff, low-band oscillator 38 and high-band oscillator 40 are internal to the meter circuitry shown in Figure 3.

Discussion of Independent Claim 23

Claim 23 sets out a signal analyzer that includes an input and a first converter system. The input receives an input signal generated external from the signal analyzer by a device under test. The first converter system includes a first local oscillator and a first converter. The first local oscillator produces

a first local oscillator signal. The first converter mixes the input signal with the first local oscillator signal to produce a first intermediate signal. When a spur is predicted to occur when the first converter system performs high side mixing and not when the first converter system performs low side mixing, the first converter system performs low side mixing. When a spur is predicted to occur when the first converter system performs low side mixing and not when the first converter system performs high side mixing, the first converter system performs high side mixing. This is not disclosed or suggested by Orndorff.

In Orndorff, receiver spurs occur when the first local oscillator and the second local oscillator and/or their harmonics combine in the first or second mixer and produce an output that falls within the third IF bandwidth. See Orndorff at column 1, lines 27 through 30.

Thus, in Orndorff, the spurs are the results of combining two internally generated signals. Orndorff does not disclose or suggest generated as a result of mixing a signal generated external to a signal analyzer with a local oscillator signal.

In claim 23, however, spurs that are predicted to occur as a result of mixing a first signal generated external to the signal analyzer by the device under test with a local oscillator signal are avoided. Orndorff does not disclose or suggest predicting or eliminating spurs generated in this manner.

Examiner, in discussing claims 3 through 5, 9 and 16 calls low-band oscillator 38 and high-band oscillator 40 "an external oscillator signal".

However, as is clear from Figure 3 and column 3, lines 9 through 23 of Orndorff, low-band oscillator 38 and high-band oscillator 40 are internal to the meter circuitry shown in Figure 3.

Conclusion

Applicant believes this Amendment has placed the present Application in condition for allowance and favorable action is respectfully requested.

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